REMARKS/ARGUMENTS

Amendments in General

1. This amendment is filed in Response to the Office Action mailed October 29, 2003. The Applicant respectfully requests that the amendment set forth be carefully considered, and that the amendments be entered as it is believed that the application, as presented would be in condition for allowance.

2. This amendment is being proposed for entry after multiple requests for continued examination have already been filed. In light of the latest final rejection issued by the Examiner, the Applicant respectfully requests that careful consideration of this amendment be given. This amendment is also proposed for entry after a final rejection, but before an appeal brief is filed. In accordance with MPEP 1207, the purpose of the proposed amendment is to remove issues from appeal and respond to the Examiner's comments made in the Final Rejection.

3. This proposal avoids the necessity to consider any new issues, or the necessity for any further search, and it is thus believed that consideration and entry of this amendment would expedite the resolution of this case. The amendment is being proposed for entry in lieu of immediate filing of Applicant's Notice of Appeal and subsequent appeal brief as it is believed that the amendment as proposed herein places the application in condition for allowance.

4. In the event that the Examiner disagrees, a telephone conference with the Examiner to narrow the issues for appeal is respectfully requested.

Amendments in General

5. Claims 1 and 13 have been amended to overcome the Examiner's objections under 37 C.F.R. 1.75(a). Claim 1 has been amended to include the limitations of claim 2, namely that two sets of apertures or openings exist along the outer surface of the muzzle brake and that the first elongated openings are positioned closest to the first end of the muzzle brake, which is configured for connection with the muzzle end of a firearm, as compared to any other hole or aperture within the device.

6. Applicant respectfully submits that it has complied with the Examiner's requirement to define a muzzle body, define the apertures within the muzzle body, and then to define the elongated apertures with respect to the other apertures or openings within the device.

Claim Rejections 35 USC §112

7. The Examiner has rejected Claims 1-3, 9, 10, 13, and 16 under 35 USC §112, first paragraph as failing to comply with the written description requirement. The Examiner maintains that the application fails to reasonably convey to one skilled in the art that the Applicant had possession of the invention. The Examiner indicates that there is nothing in the specification that would suggest that Applicant's muzzle is capable of directing propellant gasses away from the location of a shooter. The Examiner maintains that a feature such as evidence that

the holes are drilled at a 45-degree angle away from the shooter would provide evidence of this feature.

8. The Applicant respectfully disagrees with the Examiner's assessment and directs the Examiner's attention to paragraph 22 and Figure 9 of the application, as filed.

9. This paragraph describes, and this figure shows, how the present invention disperses blasts of propellant gasses away from the shooter. This is done by providing a longer path of travel for the gas to escape through and by reducing the number and amount of items that the gasses reflect against.

10. By reducing the number and location of impediments to the dispersal of propellant gasses, the amount of gas passing through the muzzle brake is increased and the amount of gas reflected back towards the shooter is reduced.

11. This reduction in gasses then correlates to a reduction in the quantity of noise and gas perceived by a shooter.

12. In as much as the gas propelling the projectile out of the end of the muzzle brake is moving forward away from the shooter, openings that have a longer longitudinal direction allow more of this gas to escape in the direction that the gas is already traveling and reflects less of the gas back toward the shooter.

13. The prior art utilized holes that had smaller longitudinal openings. Thus, more of this vase was reflected off of the muzzle brake and back towards the shooter. The configuration of the present invention limits this reflection of items back towards the shooter and thus the amount of noise and gas that the shooter perceives.

Claim Rejections - 35 USC §102

14. The Examiner has rejected claim 1 of the invention over a variety of references. However, none of these references include all of the limitations of claim 1 and are fundamentally different from the muzzle brakes and other devices presented in the other applications.

15. In particular, the Examiner has asserted that various devices contain "elongated openings" as the term is used in the present application.

16. Actually, none of these references, including Perrine, Leffel, Cellini, Hull, Mihaita, Klienguenther, include the feature of an elongated opening being positioned nearest to the first end of the muzzle brake as compared to any other aperture.

17. The position and location of these elongated openings are critical to the function of the present invention.

18. When a firearm is discharged, gasses produced by the combustion of the gun powder propel the bullet forward through the barrel.

19. When the bullet reaches the end of the barrel, these gasses are instantly allowed to expand from the end of the barrel.

20. When this occurs, the gasses propelling the bullet push back against the gun itself and cause kickback or recoil against the shooter.

21. This kickback or recoil causes the shooter to become fatigued and can cause pain to the shoulder of the person shooting the firearm.

22. Muzzle brakes are attached to firearms to reduce this kickback.

23. Muzzle brakes reduce kickback by changing the rate at which gasses from the end of a firearm are dissipated.

24. The problem with most muzzle brakes is that while reducing the amount of kickback against a person, they also cause a tremendous increase in the amount of noise perceived by a shooter.

25. This increase can be anywhere from 10 to 20 decibels.

26. This increase of noise perceived by a shooter is caused by the reflection of gases and noise off of the muzzle brake and back towards the shooter.

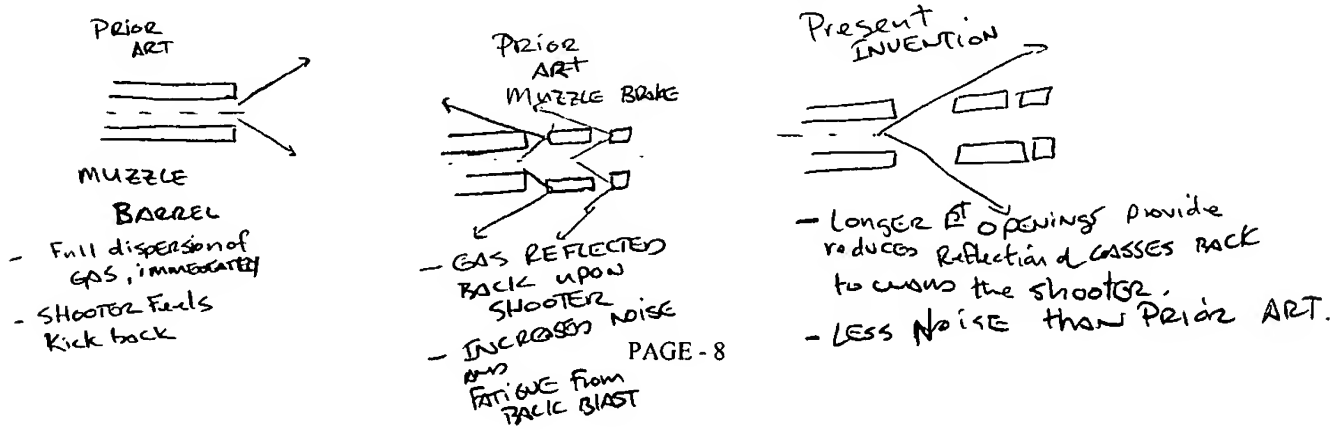
27. The inventor has found that it is the first dispersal of gasses out of the muzzle brake that causes the increase of noise because this first opening facilitates the dissipation of more gasses than any other opening positioned within the muzzle brake.

28. Gasses generally disperse out of the barrel of a gun at an angle of about 60 degrees from a centerline.

29. This same vector applies to gasses escaping from a muzzle brake.

30. The muzzle brakes in the prior art all have shortened first openings which cause the gases traveling at this vector to hit the muzzle brake and then reflect back toward the shooter.

31. This reflection is caused because the length of the first escape opening compared to the thickness of the muzzle brake is too short to allow the gasses traveling along this 60 degree vector to escape without reflecting off of the wall of the muzzle brake itself.



32. The present invention overcomes this problem by providing that the first openings through which gasses will escape, have a greater longitudinal dimension than any other opening positioned within the muzzle brake itself.

33. This configuration significantly reduces the reflection of the gases off of the muzzle brake and back towards the shooter.

34. This results in less noise perceived by the shooter by the reflected gasses. For example, the firing of a rifle with a typical muzzle brake results in the increase of noise perceived by a shooter of between 12 and 14 decibels, while a user of the present invention would perceive a decibel level of between 6 and 8 decibels because of the way in which noise producing gasses are released from the device. Drawings which demonstrate this feature are found in Figures 8 and 9 of the application as filed.

35. The length of these openings is configured to correspond with the thickness of the muzzle brake itself. Therefore, the thicker the muzzle brake, the longer the first openings in the muzzle brake must be.

36. None of the devices described in the references cited by the Examiner contain such elongated features positioned in these designated locations. As a result, none of the references cited by the Examiner contain all of the features of the present claims and cannot anticipate the present invention.

37. The Examiner has rejected claim 1 under 35 USC §102(b) as being anticipated by Perrine.

38. Perrine does not show a muzzle brake with elongated first openings that are longer than any other opening within the muzzle brake.

39. Perrine does not show a muzzle brake defining at least three elongated openings and a plurality of secondary radial gas holes.

40. Perrine does not show elongated first holes that are configured to dissipate gasses away from a shooter. In fact, the Perrine reference teaches that the gasses are reflected back towards the shooter. This is exactly contrary to the teachings of the present invention.

41. Perrine does not have any of these features.

42. The Examiner has indicated the openings (30) in Perrine have a greater longitudinal dimension than a lateral dimension.

43. Referring to Fig. 1 of the Perrine invention, the facts show that the Examiner is simply mistaken. These slots are positioned so that the longest portion of these slots are placed generally perpendicular to the orientation of the inner bore and the longer portions are positioned generally perpendicular to the direction of the bore. This is not what is claimed in the present invention and is directly contrary and opposite to the configuration taught in the present

invention.

44. The present invention has first elongated openings that have a longer longitudinal component than a lateral component. The device shown in the Perrine patent has slots that have longer lateral components than longitudinal components.

45. Because the Perrine patent does not contain all of the features claimed in the present invention, it does not anticipate the present invention. Therefore, Applicant respectfully requests that the Examiner's request be withdrawn.

46. The Examiner has also rejected claim 1 under 35 USC §102(b) as being anticipated by Leffel.

47. The Leffel device does not contain at least three elongated first openings having a greater longitudinal dimension than a lateral dimension as compared to any other opening within the muzzle brake itself.

48. In the Leffel device, the elongated openings with the greatest longitudinal dimensions are not positioned nearest to the first end as compared to any other aperture.

49. In the Leffel device, the elongated openings with the greatest longitudinal dimensions are positioned further away from the first end of the device than apertures with smaller longitudinal dimensions.

50. This is not what is claimed in the present invention.

51. In as much as the Leffel device fails to incorporate all of the features of the present invention, the Leffel device cannot anticipate the present invention under 35 USC §102(b).

52. The Examiner has rejected claim 1 under 35 USC §102(b) as being anticipated by design patent D285238 to Cellini.

53. This Cellini reference fails to disclose all of the features of the present invention.

54. In the Cellini reference, the openings closest to the first, or gun connecting end of the device are not elongated as has been described in the claims of this patent.

55. In this Cellini reference these first holes are not elongated but are round.

56. The present invention describes first elongated openings that are positioned nearest to the first end, which is defined as the end to which the muzzle brake attaches to a firearm.

57. In as much as this Cellini patent fails to describe all of the features of the present invention as amended, the Cellini reference cannot be an anticipatory reference, and therefore, withdrawal of this rejection is respectfully requested.

58. The Examiner has rejected claim 1 under US Patent No. 5,811,714 to Hull.

59. The Hull reference does not describe first elongated openings as have been described and claimed.

60. The Hull patent describes a device that has lateral dimensions that are greater than the longitudinal dimensions. This is exactly contrary to the device taught and described in the present invention.

61. Furthermore, the Hull reference does not contain a plurality of a radial gas holes.

Claim Rejections - 35 USC §103

62. The Examiner has rejected claims 9, 10, and 16 under §103(a) as being unpatentable (obvious) over Mihaita in view of Kleinguenther.

63. The Examiner has also rejected claims 3, 9, 10, 13, and 16 under §103(a) as being unpatentable over Kleinguenther alone.

64. The Examiner maintains that combining the Mihaita device with the intersecting multiple radial holes shown in the Kleinguenther patent to create longitudinal slots would have been obvious and would produce the present invention. Applicant respectfully disagrees.

65. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the Applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." MPEP § 706.02(j).

66. There is no suggestion to combine these references to arrive at the combination that describes the present invention. Similarly, there is not motivation for a reasonable expectation of success. Even if combined, these features do not teach all of the features of the present invention.

67. The Mihaita device does not have generally elongated openings positioned in the locations required by the instant application, nor does the Kleinguenther device. Even if these two devices were combined, they would not result in the combination claimed in the present invention.

68. The elongated openings in the Cellini and Mihaita devices are not located nearest to the first end of the muzzle brake. The apertures that are closest to the first end of the devices described in each of these patents are not elongated in a longitudinal direction, but rather are generally circular in shape and appearance. Likewise, the Kleinguenther device does not

describe first openings that are longitudinally elongated.

69. The Examiner has indicated that comparing the openings in the central part of the muzzle brake to the openings at the left end of the muzzle brake in the Mihaita device would produce and fulfill the limitations of the present invention. Applicant respectfully submits that the Examiner is incorrect.

70. As has been discussed previously, the elongated openings in this invention must meet three requirements.

a) These openings must have a greater longitudinal dimension than a lateral dimension,
b) must be positioned closest to the first end or muzzle connecting end of the muzzle brake as compared to any other aperture, and
c) must have a greater longitudinal dimension than any other aperture in the muzzle brake.

71. None of the devices cited by the Examiner contain all of these features, nor do they teach combinations that would arrive at all of these features.

72. Therefore, neither this combination nor any other combination of the references cited by the Examiner would produce the present invention.

73. The present invention is not obvious in light of these references.

74. Furthermore, there is no indication in any of these devices that the longest openings in the devices should or must be positioned closest to the first end of the device as compared to any other element, and that these openings be configured to direct gas away from a shooter. In as much as all of these features of the claims are not present even in a combination of these references, Applicant respectfully requests that the Examiner's rejection be withdrawn.

75. Claims 3, 9, 10, 13, and 16 have been rejected under 35 USC§103(a) as being unpatentable over Kleinguenther, U.S. Patent No. 5,305,677. The Applicant states that the size, shape, orientation, and position of the slots, as the Applicant has claimed, and no other device has contained nor taught, is of no consequence because the net effect of the release of the gas is the same. Applicant respectfully disagrees and refers to the aforementioned discussion.

76. The present invention functions not because of the net release of gas through the muzzle brake, but upon how that gas is displaced and sent through the device.

77. Simply firing a gun without a muzzle brake results in the same net gas release as firing a gun with a muzzle brake. If this were true, then there would not be any patents on muzzle brakes at all because the net release of gasses would be the same.

78. The purpose of a muzzle brake such as those that have been cited by the Examiner is to vary the rate, quantity, and direction of gas release so as to provide a desired result.

79. It is precisely the configuration of the apertures and the manner in which the gas is

released that determines the function of any muzzle brake device.

80. The Kleinguenther device provides apertures that are aligned so that a longer portion of the device extends around the muzzle brake. Thus, when the muzzle brake is impacted by the gasses propelling the projectile gas impinges upon the sides of the muzzle brakes that define the aperture and is reflected back toward the shooter.

81. The present invention configures the apertures so as to allow the passage of more gas forward out of the device and decreases the amount of gas that impinges and is reflected from the muzzle brake.

82. This configuration achieves a better result than the prior art configuration, namely decreasing the amount of noise perceived by a shooter when firing a device that utilizes the muzzle brake of the present invention.

83. The Kleinguenther device never teaches the configuration that is taught in the present invention.

84. The Kleinguenther device has openings that are laterally elongated, rather than longitudinally elongated. These openings extend into the central bore and provide a generally perpendicular connection with the bore. Because of the smaller size of aperture, more gas comes into contact with the muzzle brake body and is configured to be passed out through the device as it escapes. This device teaches away from utilizing larger elongated holes to allow gasses to escape and instead utilizes a design that forwards gas to a nozzle portion that is intended to stabilize the bullet as it passes through the muzzle brake.

85. None of these devices cited by the Examiner teach or disclose the presence of elongated openings as described in these claims positioned nearest to the muzzle connecting portion of a muzzle brake. None of these devices teach reflecting gasses away from a shooter using elongated openings to facilitate the passage of gasses out of the device. In fact, these devices teach away from such a combination. The prior art, such as Kleinguenther, teaches utilizing smaller holes to disperse gasses radially. Rather than utilizing longer longitudinally shaped apertures to direct gas dispersion forwardly.

86. The present invention teaches that elongated first openings allow for dispersion of gasses in a way that prevents the reflection of the gasses back towards the shooter. This is not taught in the cited references.

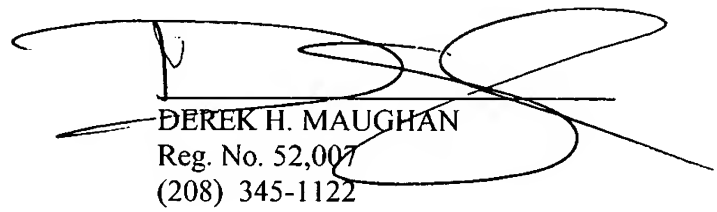
87. Since the cited references teach against the combination of elements shown in the present invention, no reasonable expectation of success can exist. Therefore, the present invention cannot be merely an obvious modification of these cited references.

Conclusion

The present invention is a novel and non-obvious invention. In light of the prolonged examination of this patent application, in the event that the Examiner does not find any of the claims allowable, Applicant respectfully requests an Interview with the Examiner to clarify issues for purposes of preparing a Notice of Appeal.

DATED this 29 day of Jan., 2004.

Very respectfully,



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